SAFETY DATA SHEET
Oxygen Generator, Chemical – Type C

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Oxygen Generator, Chemical** **Revision:** May, 2015

Product Use: For use in **Aircraft oxygen module assemblies that provide supplemental emergency oxygen**

Product Part Numbers:

803000-62, -63, -64, -65	801387-92, -93	807737-01, -02, -03, -04	807525-01
807217-01,-02,-03,-04,-05,-06	807218-01, -02, -03	807232-01, -02, -03	807242-01, -02, -03
807416-01, -02, -03	807420-01, -02, -03	807884-01, 02, 03	807885-01, 02, 03
808144-01, -02	808145-01, -02	808212-01, -02, -03	

Zodiac Oxygen Systems US (ZOSU)
225 Erie Street
Lancaster, NY 14086
Telephone 716-683-5100

CHEMTREC Emergency Telephone Numbers:

United States: 800-424-9300
International: 703-527-3887 (collect)

SECTION 2: HAZARD IDENTIFICATION

Classification of Substance: This chemical is classified as an Oxidizing Solid.

Eye Contact: Generator contents can burn, cause eye irritation and redness.

Skin Contact: Generator contains sodium chlorate. Sodium chlorate is irritating to skin. May cause rash, pain redness and severe irritation. Immediately wash skin for at least 15 minutes while removing contaminated clothing.

Ingestion: Generator contents could cause vomiting, abdominal pain, and possible liver and kidney damage. Give large amounts of water to dilute concentration. Both potassium hydroxide and sodium chlorate are toxic if ingested. Reported lethal doses of sodium chlorate are 2 grams for children and 15 - 30 grams for adults. Estimated lethal dose for potassium hydroxide is 5 grams.

Inhalation: Dust from generator contents may cause irritation to the mucous membranes, throat and nose. Could also cause lung damage and is a possible carcinogen.

SAFETY DATA SHEET
Oxygen Generator, Chemical – Type C

GHS LABEL ELEMENTS:

Oxygen Generator, Chemical
(Sodium Chlorate, Potassium Perchlorate: **oxidizers**)

Signal Word: Danger
Hazard Statement: May intensify fire; oxidizer.

SAFETY DATA SHEET
Oxygen Generator, Chemical – Type C

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Contents of GENERATOR	CAS #	WGT. %
Sodium Chlorate	7775-09-9	less than 90
Iron Powder	7439-89-6	less than 10
Manganese Dioxide	1313-13-9	less than 10
Mica	12001-26-2	less than 10
Copper Oxide	1317-38-0	less than 10
Feldspar	68476-25-5	less than 5
Magnesium Aluminate	12068-51-8	less than 5
Potassium Hydroxide	1310-58-3	less than 5
Anhydrous Aluminum Silicate	66402-68-4	less than 5
Potassium Permanganate	7722-64-7	less than 1
Silicon Dioxide (fumed silica)	14808-60-7	less than 1
Titanium Dioxide	13463-67-7	less than 1
Potassium Perchlorate	7778-74-7	less than 1
Titanium Powder	7440-32-6	less than 1
Iron Oxide	1309-37-1	less than 1
Tetrazene	109-27-3	less than 0.01
Lead styphnate	15245-40-0	less than 0.01

Listed as IARC Carcinogen: silicon dioxide
Listed as NTP Carcinogen: silicon dioxide, talc
OSHA Carcinogen: none

SECTION 4: FIRST AID MEASURES

Eye Contact: In the event of contact with the generator contents, flush eyes with a directed stream of water for at least 15 minutes. Forcibly hold eyelids apart to ensure complete irrigation of all eye and lid tissue. Get medical attention if irritation occurs.

Skin Contact: In the event of contact with the generator contents, wash affected area with soap and water. Get medical attention if irritation occurs.

Inhalation: In the event of contact with the generator contents, avoid breathing dust. Remove to fresh air at once. If victim is having difficulty breathing, provide oxygen and call emergency responders. If victim is not breathing give artificial respiration and call emergency responders.

Ingestion: Contact emergency responders immediately. DO NOT INDUCE VOMITING. Give large amounts of water to dilute.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point: Not Applicable

Flash Point Method: Not Applicable

Flammable Limits: Not Applicable

Auto ignition Temperature: Not Applicable

Unusual Fire & Explosion Hazards: Generators contain oxidizers. Oxidizers generate their own oxygen as they burn and therefore cannot be extinguished by means other than water. Do not use CO_2 or dry extinguishers as they are ineffective and may create a worse situation. Contact between the generator contents and other materials may cause fire.

Special Firefighting Procedures: Avoid bodily contact. Wear self contained breathing apparatus and wear appropriate protective equipment. Keep material from exposure to high heat by using water to cool containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled:

Immediately ventilate area as well as possible. Loose chemicals and components should be carefully placed into a dry metal container. HEPA vacuuming may be used for dust removal and to avoid dust dispersal. Be sure to wear appropriate PPE while conducting clean up. If an amount spills that is too large for local clean up, call HAZMAT responders immediately

SECTION 7: HANDLING AND STORAGE

Storage Temperature & Pressure: Store the generators in a well ventilated, cool, dry area at normal ambient temperature and pressure. Keep away from heat or ignition sources, combustibles and other oxidizers.

General: Do not store in wet or moist environments. Keep generators in manufacturer’s original packaging when not in use. Practice good housekeeping techniques.

SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION

Contents of GENERATOR	**EXPOSURE LIMITS as of 2008**
Sodium Chlorate	none (oxidizer)
Iron Powder	none, see iron oxide
Manganese Dioxide	ACGIH TLV: 0.2mg/m3 (TWA) for manganese, elemental and inorganic compounds as Mn. OSHA PEL: 5mg/m3 fume as Mn
Mica	ACGIH TLV 3 mg/m3 total TWA OSHA, PEL 20 mppcf
Copper Oxide	ACGIH: 1 mg/m3 TWA (dusts & mists) 0.2 mg/m3 TWA (fume) OSHA: 1 mg/m3 TWA (dusts & mists) 0.1 mg/m3 TWA (fume) NIOSH: 1 mg/m3 TWA (dusts & mists) 0.1 mg/m3 TWA (fume)
Feldspar	None Listed
Magnesium Aluminate	None Listed
Potassium Hydroxide	ACGIH TLV: 2 mg/m3Ceiling OSHA PEL: 2 mg/m3 Ceiling
Anhydrous Aluminum Silicate	ACGIH TLV: 2 mg/m3 total dust OSHA PEL: 15 mg/m3 total dust
Potassium Permanganate	Strong Oxidizer ACGIH TLV: 0.2mg/m3 (TWA) for manganese, elemental and inorganic compounds as Mn. OSHA PEL: 5 mg/m3 Ceiling for manganese compounds as Mn
Silicon Dioxide (fumed silica)	ACGIH TLV 0.0025mg/m3 OSHA, PEL 10 mg/m3/[%SiO2+2] respirable dust; 30 mg/m3/[%SiO2+2] total dust
Titanium Dioxide	ACGIH TLV 10mg/m3 total TWA 5 mg/m3 respirable dust OSHA, PEL 15 mg/m3 5 mg/m3 respirable dust
Potassium Perchlorate	none (oxidizer)
Titanium Powder	None Listed
Iron Oxide	ACGIH TLV 5 mg/m3 fume as Fe OSHA, PEL 10 mg/m3 fume
Tetrazene	None established
Lead styphnate	None established

Do not disassemble the generator or allow the generator to become damaged.

Personal Protection: If handling the contents of the generator:

Eye Protection: Safety glasses or goggles
Respiratory Protection: NIOSH approved air purifying filter respirator
Skin and body protection: Protective clothing
Hand protection: Impervious gloves

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: A metal canister containing a compressed, gray, chemical core and other components.

Odor: None

Odor Threshold: Not Applicable

pH: Not Applicable

Melting Point/Freezing Point: Not Applicable

Initial Boiling Point and Range: Not Applicable

Flash Point: Not Applicable

Evaporation Rate: Not Applicable

Flammability: Not Applicable

UEL: Not Applicable

LEL: Not Applicable

Vapor Pressure: Not Applicable

Vapor Density: Not Applicable

Relative Density: Not Applicable

Solubility(ies): Not Applicable

Partition Coefficient: Not Applicable

Autoignition Temperature: Not Applicable

Decomposition Temperature: Not Applicable

SECTION 10: STABILITY AND REACTIVITY

Conditions to Avoid: Avoid storing generators with chemicals, acids, ignition sources and combustible materials. Avoid opening the generator housing. Avoid mixing or contaminating the contents of the generator with other chemicals, including acids, and combustible materials. Keep contents of generator away from sources of friction and ignition sources.

Incompatibility: The contents of the generator are incompatible with oils, organic chemicals, acids and metals including aluminum.

Hazardous Decomposition Products: Can include chlorine and chlorine dioxide.

Hazardous Polymerization: Will not occur.

Stability: Stable

SECTION 11: TOXICOLOGICAL PROPERTIES

Acute Toxicity: Not Applicable

Skin Corrosion/Irritation: Not Applicable

Serious Eye Damage: Not Applicable

Respiratory or Skin Sensitization: Not Applicable

Immediate Effects: Not Applicable

Delayed Effects: Not Applicable

Germ Cell Mutagenicity: Not Applicable

Carcinogenicity: Not Applicable

Reproductive Toxicity: Not Applicable

Aspiration Hazard: Not Applicable

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not Applicable

Persistence and Degradability: Not Applicable

Bioaccumulative Potential: Not Applicable

Mobility in Soil: Not Applicable

Other adverse effects: Not Applicable

SECTION 13: DISPOSAL CONSIDERATIONS

Generators must be spent prior to disposal. The spent generator must be disposed of in accordance with all Federal, State and local regulations.

SECTION 14: TRANSPORTATION INFORMATION

DOT/UN Shipping Name: Oxygen Generator, Chemical

DOT Hazard Class: 5.1

SAFETY DATA SHEET
Oxygen Generator, Chemical – Type C

DOT/UN Number:	UN 3356
Packing Group:	II – Medium Danger
Marine Pollutant:	No

Notice: Special Shipping restrictions apply. Refer to United States Code of Federal Regulations (CFR 49) or other applicable government regulations. Government approval, exemptions or permits may be required.

SECTION 15: REGULATORY INFORMATION

This device is a chemical oxygen generator and is classified as an "Article" as defined in 29 CFR 1910.1200 (b) (6) (v) - 1 July 1995. Therefore, this device does not require a Material Safety Data Sheet. However, for Federal procurement, a MSDS is required per Federal Standard No. 313C (GSA Federal Supply Service).

SECTION 16: OTHER INFORMATION

The information contained herein is, to the best of our knowledge and belief, accurate. However, AVOX Systems Inc. assumes no liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. It is the responsibility of the user to comply with all applicable Federal, State, and Local laws and regulations.

End of Document